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**IIO KOKI**

(74) Representative:

**(54) METHOD AND SYSTEM  
 FOR FABRICATING  
 SEMICONDUCTOR DEVICE**

(57) Abstract:

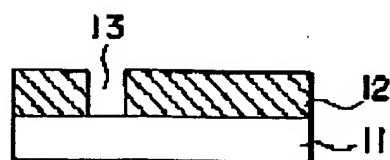
**PURPOSE:** To realize continuous deposition in a same chamber by forming a first tungsten film on an insulation layer through reduction of diborane and then forming a second tungsten film thereon through reduction of hydrogen or silane.

**CONSTITUTION:** A mixture gas of WF<sub>6</sub> gas, B<sub>2</sub>H<sub>6</sub> gas and H<sub>2</sub> gas is fed into a chamber and a first tungsten film 14 is formed on an insulation layer 12 by CVD. In this regard, the WF<sub>6</sub> gas is principally reduced by the B<sub>2</sub>H<sub>6</sub> gas thus forming an adhesion layer 14. Subsequently, supply of the B<sub>2</sub>H<sub>6</sub> gas is stopped and the mixture gas of WF<sub>6</sub> gas and H<sub>2</sub> gas is fed into a chamber and a conductive layer 15 of second tungsten is formed by CVD. In this regard, the WF<sub>6</sub> gas is

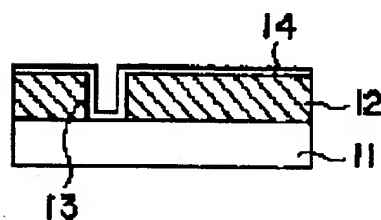
reduced by the H<sub>2</sub> gas thus forming the layer 15. Since the deposition can be carried out continuously in same chamber by simply switching the reaction gas, throughput can be enhanced.

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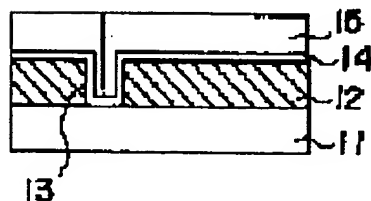
(a)



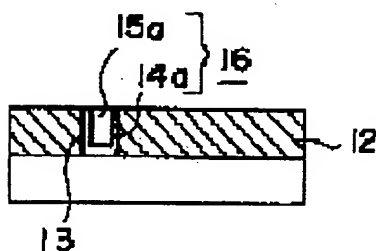
(b)



(c)



(d)



(e)

